Cloning Our Way to Survival?

The cloning of endangered species has nothing to do with conservation, but is another quick-fix 'solution to the extinction crisis that we have brought upon ourselves, writes Ashish Fernandes.

In the first week of the new millennium, a gaur called Noah was born in Iowa in the United States. Not an ordinary gaur, but the product of a cloning operation wherein DNA from the skin cells of a gaur that died in 1993 was fused with cow eggs stripped of their nuclei and then implanted in a surrogate mother, an Angus-Herford cow.

Noah's birth was greeted with acclaim across the world. The gaur is an endangered species, so there has been much speculation that this development could hold great potential for preventing the extinction of species and even for resurrecting species that have vanished from the face of the earth. The scientists who cloned Noah soon announced that a recently extinct Spanish goat, the bucardo, was next in line and another group is reportedly keen to clone a 20,000-year-old frozen woolly mammoth found in Siberia. Within a few days of Noah's birth, an announcement was made that the Indian government was setting up a project to clone the extinct Asiatic cheetah at the Centre for Cellular and Molecular Biology in Hyderabad, at a cost of Rs. five crores. The possibilities seem endless. With thousands of species hurting towards extinction, this technology could solve the problem of the earth's vanishing wildlife.

Or so they said. Noah died within 48 hours, apparently of clostridial enteritis, a bacterial infection, probably contracted from his mother. The scientists working on the project insisted that Noah's death had nothing to do with him being a clone.

By some estimates, 137 species are disappearing from the earth each day, which adds up to an astounding 50,000 species every year, about 1,000 times the natural rate of extinction. Given this scenario and the gloom it often inspires, the idea that we can simply recreate species is extremely alluring.

Yet one can't help feeling that this is a short-sighted view. Whether Noah would have survived or not, the argument that cloning offers a way out of the conservation crisis facing the planet leaves one feeling a bit uneasy, and for a variety of reasons.

Cloning is prohibitively expensive at the moment. When most biodiversity areas across the world, especially in the South, are starved of funds for routine protection and maintenance work, surely that money is better used to protect what still remains? The cloning establishment would like the public to believe that this is the solution to the problem of conserving endangered species, but if a fraction of the funds that would be necessary to carry out such programmes on a sufficiently large scale were devoted immediately to the areas that need them most, cloning species might not be necessary at all!

While India's wildlife protection budget is abysmally inadequate, five crores miraculously appeared for the cheetah cloning project!

Of course, there are innumerable other issues as well. Once animals are cloned, what about the reintroduction process? Assuming, of course, that reintroduction into the wild is the end purpose of the cloning game. This will require further inputs in terms of finances and effort. And exactly how feasible the artificial rearing and reintroduction of higher carnivores is, remains anyone's guess, given the overwhelming role that environment and upbringing plays in training young ones to hunt and survive on their own. A tiger cub, for example, learns to stalk its prey by watching its mother, while a chital fawn needs the protection of the herd. Neither will avail of these benefits from a lab assistant, no matter how highly trained.

Implanting cloned embryos in wild surrogate mothers will be infinitely more difficult and prone to complications than using a captive surrogate mother. Added to this is the very real possibility that the entire million-dollar experiment could be unexpectedly eaten by a hungry tiger!

There is an even more worrying myopia surrounding many of the proposals to resurrect extinct species. If the root cause of that particular creature's extinction is ignored, then we are condemning the cloned animal to life in a zoo or a similar institution. For example, the Asiatic cheetah disappeared because its grassland habitat disappeared. So even if the effort to clone it is successful, the problem of finding similar grasslands to reintroduce it into the wild remains. There is a total absence of any emphasis on the importance of ecosystem conservation. If a species disappears, we can be sure that its habitat will not long outlive it. Where will the hordes of jaguars, tigers and gaur that we create live? In zoos or artificially-created enclosures? Are we then to grow micro-Amazonas in glass cages?

Apart from these 'practical' problems are the fundamental flaws in the attitude that cloning endangered species is the way forward for conservation. With growing demands on resources prompted by unsustainably high levels of consumption, it will be tempting to sacrifice wild habitats for oil projects, mines or dams, and justify such actions by saying that the species these habitats house can easily be 'created' and kept alive 'for future generations'. The effects such actions would have on global biodiversity and climate control mechanisms would be catastrophic, jeopardising all life on earth. You might clone a species or two, but you definitely can't recreate the complex and little-understood interactions between individual species, their ecosystems and the role they play in maintaining planetary stability.

The global community is looking for 'techno-fix' solutions to the ecological problems humanity has brought on itself. "So what if our activities destroy something? We can just create it again!" This ignores the root cause of the problem and attempts to address the symptoms, not the disease itself. Even if we did clone and release a few hundred tigers into the wild, they would continue to have their habitat destroyed by one mega-project or another or be poached for the Chinese medicine trade. Cloning appears so attractive because it seems to be the easy way out to counter extinctions, rather than the tougher option of protecting Wild habitats. Convincing politicians and bureaucrats of the need to protect wildlife is hard enough, without having to contend with this argument too.

At best (assuming we leave aside ethical issues), cloning might have a very minor supporting role to play in the much larger effort to protect what is left today, habitats as well as species. So while cloning might be a 'big step' forward in the science of genetics, it is about as far away from true conservation as you can get.